

WASTE SITE RECLASSIFICATION FORM

Operable Unit: 300-FF-2

Control No.: 2014-113

Waste Site Code(s)/Subsite Code(s): 300-290, Radiological Debris Area East of Horn Rapids Disposal Landfill

Reclassification Category: Interim ☐ Final ☒

Reclassification Status: Closed Out ☐ No Action ☒ Rejected ☐
RCRA Postclosure ☐ Consolidated ☐ None ☐

Approvals Needed: DOE ☒ Ecology ☐ EPA ☒

Description of current waste site condition:

The 300-290, Radiological Debris Area East of Horn Rapids Disposal Landfill waste site, part of the 300-FF-2 Operable Unit, was identified as a waste site requiring remediation in the *Hanford Site 300 Area, Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1*, Hanford Site, Benton County, Washington, U.S. Environmental Protection Agency, Region 10, Seattle, Washington (EPA 2013). The 300-290 waste site was previously included as a "plug-in" site in the Tri-Party Agreement Administrative Record *Fact Sheet: 300 Area "Plug-In" Waste Sites for Fiscal Year 2011*, U.S. Department of Energy, Richland, Washington (DOE-RL 2011) in accordance with the *Interim Action Record of Decision for the 300-FF-2 Operable Unit, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington (EPA 2001), and the *Explanation of Significant Differences for the 300-FF-2 Operable Unit Interim Action Record of Decision*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington (EPA 2009).

The 300-290 waste site is located approximately 70 m (230 ft) east of the northern most point of the Horn Rapids Landfill and measures approximately 8 by 8 m (26 by 26 ft). The waste site, which is posted as an underground radiological material area, consists mostly of rusted metal automotive parts, scraps of crumpled sheetmetal, electrical wire debris, and engine gaskets. According to the *Port of Benton Transfer Land All Appropriate Inquiry Report* (DOE-RL 2008), light ballasts with fixed alpha contamination were present at the site. No beta-gamma contamination was detected. The ballasts were managed as polychlorinated biphenyl (PCB) items and were moved to a storage location in the 400 Area. After removal of the ballasts, no contamination was detected in the area where the PCB ballasts were found (DOE-RL 2008). A radiological survey on the automotive parts and other debris was conducted on May 22, 2014. No radiological activity above background or removable contamination above the instrument detection limit was observed as documented in Radiological Survey Record RSR-300PS-14-1680 (WCH 2014b).

The 300-290 waste site was recommended for remove, treat, and dispose in April 2011. Formal verification sampling of the waste site was not performed; however, a composite in-process soil sample collected in September 2014 from the surface soils beneath the debris demonstrates that contamination above cleanup levels does not exist at the site; therefore, no action is required.

Basis for reclassification:

The in-process sampling results support a reclassification of this site to Final No Action.

Additional information is provided in the *Supporting Information for Reclassification of the 300-290, Radiological Debris Area East of Horn Rapids Disposal Landfill Waste Site* (attached).

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Regulator comments:

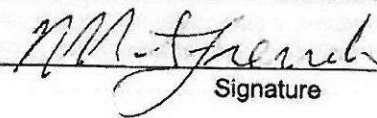
Waste Site Controls:

Engineered Controls: ☐ Yes ☒ No Institutional Controls: ☐ Yes ☒ No O&M Requirements: ☐ Yes ☒ No

If any of the Waste Site Controls are checked Yes, specify control requirements including reference to the Record of Decision, TSD Closure Letter, or other relevant documents:

 M. S. French

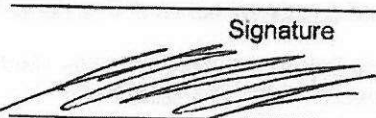
DOE Federal Project Director (printed)

 Signature

1/23/15
Date

NA


Ecology Project Manager (printed)

 Signature

Date

B. Simes

EPA Project Manager (printed)

 Signature

1/23/15
Date

**SUPPORTING INFORMATION FOR RECLASSIFICATION OF THE
300-290, RADIOLOGICAL DEBRIS AREA EAST OF HORN RAPIDS
DISPOSAL LANDFILL WASTE SITE**

Attachment to Waste Site Reclassification Form 2014-113

December 2014

GENERAL SITE INFORMATION AND BACKGROUND

The 300-290, Radiological Debris Area East of Horn Rapids Disposal Landfill waste site, part of the 300-FF-2 Operable Unit, is posted as an underground radiological material area. The site is located approximately 70 m (230 ft) east of the northern most point of the Horn Rapids Disposal Landfill (Figure 1) and measures approximately 8 by 8 m (26 by 26 ft). The waste site consists of debris, mostly rusted metal automotive parts, scraps of crumpled sheetmetal, electrical wire debris, and engine gaskets inside a posted underground radiological material area.

The debris at this waste site is consistent with the debris that was deposited in the Horn Rapids Disposal Landfill, which operated as an uncontrolled landfill from the late 1940s to the 1970s. The landfill is currently inactive and was remediated in accordance with the *Record of Decision: Hanford 1100-Area (USDOE)* (EPA 1993). The landfill has been taken off the National Priorities List and it was capped and put under institutional controls (DOE-RL 2008).

In 2008, the U.S Department of Energy contractor Fluor Hanford conducted field walkdowns of the area where this waste site is located to assess the area for possible land transfer. During the walkdown, piles of metal shop debris, aluminum sheets, and light ballasts were observed near the Horn Rapids Disposal Landfill. During the first visit to the land transfer area, eight light ballasts were observed. After closer inspection during a subsequent visit, 11 ballasts were found, some of which were half-buried in the sand. No digging was performed. No markings were found on the ballasts; therefore, they were assumed to contain polychlorinated biphenyls (PCBs).

The ballasts had fixed alpha readings up to 216 disintegrations per minute per 100 cm² (15.5 in.²). Beta-gamma emissions and removable contamination were not detected. The ballasts were managed as PCB items and were moved to a storage location in the 400 Area. After removal of the ballasts, no contamination was detected in the area where the PCB ballasts were found (DOE-RL 2008).

A walkdown was conducted on July 22, 2009, to support an orphan sites evaluation (WCH 2009). The posted area was located. The material in the posted area consisted mostly of rusted metal automotive parts, scraps of crumpled sheetmetal, electrical wire debris, and engine gaskets. A 2009 photograph of the waste site is provided in Figure 2.

During a routine surveillance on May 22, 2014, radiological surveys in the form of smears were taken of the waste site debris (automotive parts and sheet metal) and soils. No radiological activity above background or removable contamination above the instrument detection limit was observed as documented in Radiological Survey Record RSR-300PS-14-1680 (WCH 2014b).

An in-process composite soil sample was collected from across the waste site on September 25, 2014. Additionally, two test pits were hand excavated under the surface debris to determine if additional debris was present below the ground surface. No debris or stained soil was observed below the surface. Following sampling and test pitting activities conducted on September 25, 2014, an additional site walkdown was conducted on December 2, 2014. A photograph of the current site conditions is provided in Figure 3.

Figure 1. The 300-290 Waste Site Location Map.

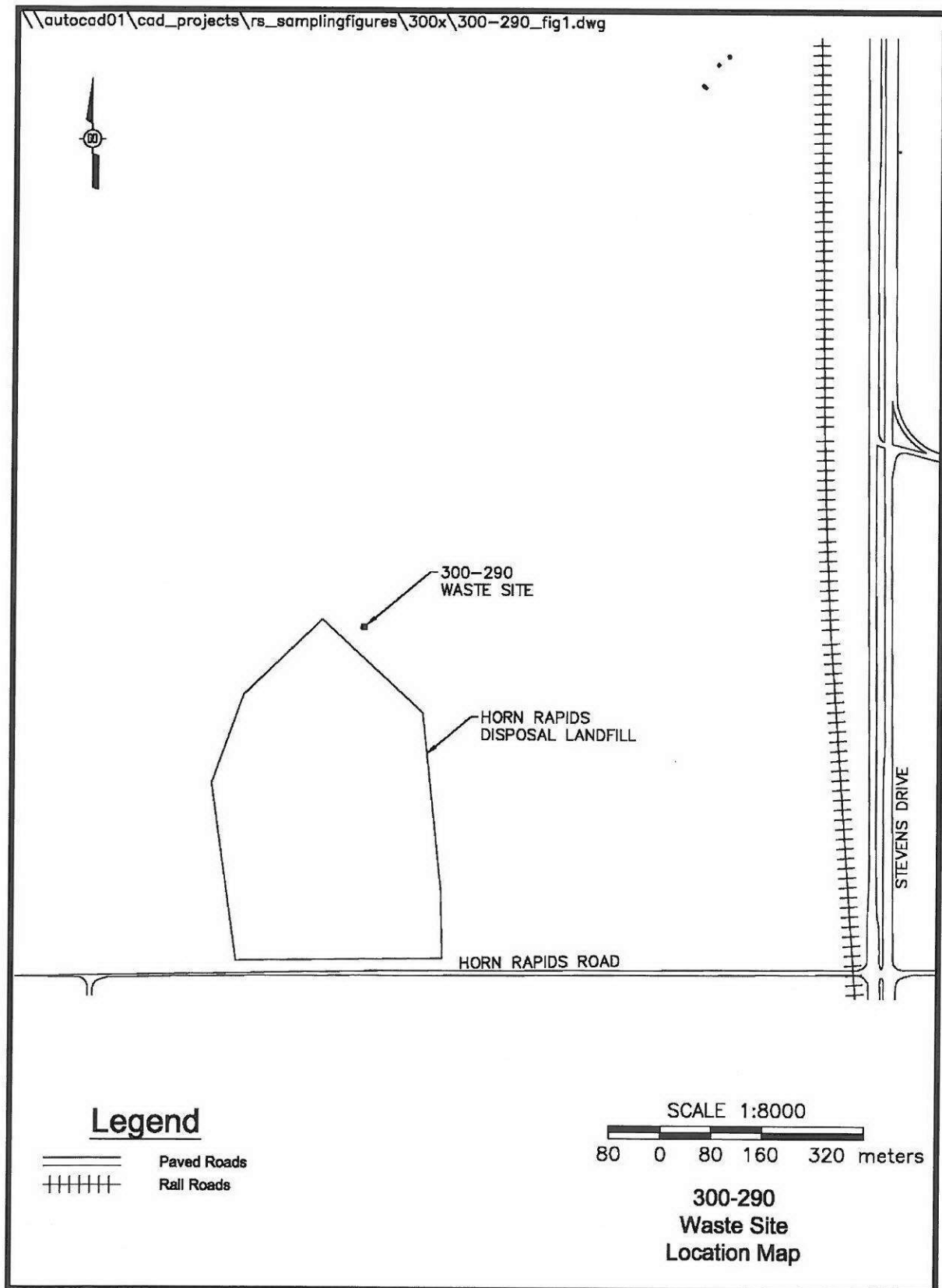


Figure 2. Photograph of the 300-290 Waste Site, Dated July 22, 2009.



Figure 3. Photograph of the 300-290 Waste Site, Dated December 2, 2014.



SAMPLING ACTIVITIES

An in-process composite sample (J1V0D8) consisting of 30 aliquots of soil from across the waste site was collected on September 25, 2014. Aliquots were collected from locations evenly distributed across the site and from soils underneath the debris, which was moved before collection. In addition, two test pits were hand excavated under concentrations of metal to approximately 0.6 m (2 ft) below grade to determine if debris was present below the surface and assess the conditions of the underlying soils (Figure 4). No debris was encountered and no soil staining was observed. Site observations concluded that the debris was limited to a small, localized, surface deposit and no materials continued at depth.

Figure 4. Photograph of Hand-Excavated Test Pit at the 300-290 Waste Site, Dated September 25, 2014.



The in-process sample was collected to support a determination that residual contaminant concentrations at this site meets the cleanup criteria specified in the *Hanford Site 300 Area, Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1, Hanford Site, Benton County, Washington* (EPA 2013). The in-process sample was submitted for full protocol laboratory analysis and was analyzed using U.S. Environmental Protection Agency-approved analytical methods as shown in Table 1. A summary of the composite sample collected is provided in Table 2.

Table 1. 300-290 Waste Site Laboratory Analytical Methods.

Analytical Method	Contaminants of Concern
ICP metals ^a – EPA Method 6010	Metals
Mercury – EPA Method 7471	Mercury
PAH – EPA Method 8310	Polycyclic aromatic hydrocarbons
TPH – NWTPH-Dx	Total petroleum hydrocarbons
GEA – gamma spectroscopy	Gamma emitting radionuclides

^a Analysis was performed for the expanded list of ICP metals to include aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium (total), cobalt, copper, iron, lead, lithium, magnesium, manganese, molybdenum, nickel, potassium, selenium, silicon, silver, sodium, strontium, tin, uranium, vanadium, zinc, and zirconium in the analytical results package.

EPA = U.S. Environmental Protection Agency

NWTPH-Dx = Northwest total petroleum hydrocarbons-diesel range organics

GEA = gamma energy analysis

PAH = polycyclic aromatic hydrocarbons

ICP = inductively coupled plasma

TPH = total petroleum hydrocarbons

Table 2. Sample Summary for the 300-188:2 Subsite.

Sample Location	Sample Type	HEIS Number	Sample Date	Washington State Plane Coordinates (m)		Sample Analysis
				Northing (m)	Easting (m)	
300-290	Composite	J1V0D8	9/25/2014	114367.0	592786.9	ICP metals ^a , mercury, PAH, TPH, GEA

Source: Field logbooks EL-1663-06 (WCH 2014a)

^a Analysis for the expanded list of ICP metals included aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium (total), cobalt, copper, iron, lead, lithium, magnesium, manganese, molybdenum, nickel, potassium, selenium, silicon, silver, sodium, strontium, tin, uranium, vanadium, zinc, and zirconium in the analytical results package.

GEA = gamma energy analysis

PAH = polycyclic aromatic hydrocarbons

HEIS = Hanford Environmental Information System

TPH = total petroleum hydrocarbons

ICP = inductively coupled plasma

Contaminants of Concern

The contaminants of concern were determined based on the type of debris observed at the 300-290 waste site and include inductively coupled plasma metals, PCBs, total petroleum hydrocarbons (TPH), and gamma-emitting radionuclides.

Sample Results

The sample results from the composite soil sample indicate that contamination above cleanup levels does not exist at the 300-290 waste site; therefore, no action is required.

The laboratory-reported sample results for all constituents are stored in a project-specific database prior to archival in the Hanford Environmental Information System and are included in Appendix A.

SUMMARY FOR FINAL NO ACTION DETERMINATION

The in-process sampling results support a reclassification of the 300-290 waste site to Final No Action.

REFERENCES

- DOE-RL, 2008, *Port of Benton Transfer Land All Appropriate Inquiry Report*, DOE/RL-2008-68, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 2011, *Fact Sheet: 300 Area "Plug-In" Waste Sites for Fiscal Year 2011*, AR/PIR Accession Number 1109011799, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- EPA, 1993, *Record of Decision: Hanford 1100-Area (USDOE)*, EPA/ROD/R10-93/063, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2001, *Interim Action Record of Decision for the 300-FF-2 Operable Unit, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2009, *Explanation of Significant Differences for the 300-FF-2 Operable Unit Interim Action Record of Decision*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2013, *Hanford Site 300 Area, Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- WCH, 2009, *Orphan Sites*, Logbook EL-1616-02, pp. 83, Washington Closure Hanford, Richland, Washington.
- WCH, 2014a, *D4 Waste Site Miscellaneous Sampling*, Logbook EL-1663-06, pp. 42, Washington Closure Hanford, Richland, Washington.
- WCH, 2014b, *Radiological Survey Record: Work Progress 300PS/300-290 URMA Survey*, RSR-300PS-14-1680, Washington Closure Hanford, Richland, Washington.

APPENDIX A
IN-PROCESS SAMPLE DATA

Attachment to Waste Site Reclassification Form 2014-113

300-290 Sample Data (Metals, TPH, and PCBs).

Sample Location	Sample Numer	Sample Date	Northing	Easting	Aluminum			Antimony			Arsenic			Barium		
					mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
300-290	J1V0D8	9/25/14	114367	592786.8	5730		6.54	3.17	DU	3.17	0.617	B	0.481	69.8	N	0.0962

Sample Location	Sample Numer	Sample Date	Northing	Easting	Beryllium			Boron			Cadmium			Calcium		
					mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
300-290	J1V0D8	9/25/14	114367	592786.8	1.21		0.0962	1.22	B	0.962	0.711		0.0962	2870		7.69

Sample Location	Sample Numer	Sample Date	Northing	Easting	Chromium			Cobalt			Copper			Iron		
					mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
300-290	J1V0D8	9/25/14	114367	592786.8	9.47		0.144	8.61		0.144	59.3		0.288	18800		7.69

Sample Location	Sample Numer	Sample Date	Northing	Easting	Lead			Lithium			Magnesium			Manganese		
					mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
300-290	J1V0D8	9/25/14	114367	592786.8	0.583	B	0.317	7.6	D	0.394	3820		8.17	298		0.192

Sample Location	Sample Numer	Sample Date	Northing	Easting	Mercury			Molybdenum			Nickel			Potassium		
					mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
300-290	J1V0D8	9/25/14	114367	592786.8	0.0108	B	0.004	0.192	U	0.192	12.3	*	0.144	1440		6.15

Sample Location	Sample Numer	Sample Date	Northing	Easting	Selenium			Silicon			Silver			Sodium		
					mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
300-290	J1V0D8	9/25/14	114367	592786.8	0.987	BD	0.325	524	MN	1.44	0.522	C	0.0962	89.8	C	6.73

Sample Location	Sample Numer	Sample Date	Northing	Easting	Strontium			Tin			Uranium			Vanadium		
					mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
300-290	J1V0D8	9/25/14	114367	592786.8	18.4		0.0962	2.88	DU	2.88	0.595	D	0.013	48.8		0.0962

Sample Location	Sample Numer	Sample Date	Northing	Easting	Zinc			Zirconium		
					mg/kg	Q	PQL	mg/kg	Q	PQL
300-290	J1V0D8	9/25/14	114367	592786.8	61.7		0.385	16	DN	0.0984

Sample Location	Sample Numer	Sample Date	Northing	Easting	TPH - diesel range			TPH - motor oil (high boiling)		
					ug/kg	Q	PQL	ug/kg	Q	PQL
300-290	J1V0D8	9/25/14	114367	592786.8	3870	J	2170	21100		2170

Sample Location	Sample Numer	Sample Date	Northing	Easting	Aroclor-1016			Aroclor-1221			Aroclor-1232			Aroclor-1242		
					ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
300-290	J1V0D8	9/25/14	114367	592786.8	1.11	U	1.11	1.11	U	1.11	1.11	U	1.11	1.11	U	1.11

Sample Location	Sample Numer	Sample Date	Northing	Easting	Aroclor-1248			Aroclor-1254			Aroclor-1260			Aroclor-1262		
					ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL	ug/kg	Q	PQL
300-290	J1V0D8	9/25/14	114367	592786.8	7.27		1.11	17.2		1.11	1.11	U	1.11	17.8		1.11

Sample Location	Sample Numer	Sample Date	Northing	Easting	Aroclor-1268		
					ug/kg	Q	PQL
300-290	J1V0D8	9/25/14	114367	592786.8	1.11	U	1.11

300-290 Sample Data (Radionuclides).

Sample Location	Sample Numer	Sample Date	Northing	Easting	Americium-241		Antimony-125		Cerium-144	
					pCi/g	Q	MDA	pCi/g	Q	MDA
300-290	J1V0D8	9/25/14	114367	592786.8	-0.036	U	0.09	0.008	U	0.11
									0.098	U
									0.25	

Sample Location	Sample Numer	Sample Date	Northing	Easting	Cesium-134		Cesium-137		Cobalt-60	
					pCi/g	Q	MDA	pCi/g	Q	MDA
300-290	J1V0D8	9/25/14	114367	592786.8	-0.43	U	0.04	0.231		0.06
									0.012	U
									0.04	

Sample Location	Sample Numer	Sample Date	Northing	Easting	Europium-152		Europium-154		Europium-155	
					pCi/g	Q	MDA	pCi/g	Q	MDA
300-290	J1V0D8	9/25/14	114367	592786.8	0.113	U	0.13	-0.042	U	0.06
									0.151	
									0.11	

Sample Location	Sample Numer	Sample Date	Northing	Easting	Lead-212		Lead-214		Potassium-40	
					pCi/g	Q	MDA	pCi/g	Q	MDA
300-290	J1V0D8	9/25/14	114367	592786.8	0.68		0.12	0.538		0.09
									17.049	
									0.52	

Sample Location	Sample Numer	Sample Date	Northing	Easting	Protactinium-234m		Radium-226		Radium-228	
					pCi/g	Q	MDA	pCi/g	Q	MDA
300-290	J1V0D8	9/25/14	114367	592786.8	-0.221	U	4.44	0.531		0.17
									0.655	
									0.22	

Sample Location	Sample Numer	Sample Date	Northing	Easting	Ruthenium-106		Thallium-208		Thorium-234	
					pCi/g	Q	MDA	pCi/g	Q	MDA
300-290	J1V0D8	9/25/14	114367	592786.8	0.026	U	0.35	0.613		0.07
									1.87	
									0.97	

Sample Location	Sample Numer	Sample Date	Northing	Easting	Uranium-235		Uranium-238		Zinc-65	
					pCi/g	Q	MDA	pCi/g	Q	MDA
300-290	J1V0D8	9/25/14	114367	592786.8	-0.016	U	0.25	1.87		-0.006
									U	0.1